

Amendments to Claims

This listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (previously presented) An isolated nucleic acid encoding a polypeptide with isoflavone synthase activity having the amino acid sequence set forth in SEQ ID NO:66.

Claim 2-10 (canceled).

Claim 11. (previously presented) A chimeric polynucleotide comprising the nucleic acid of Claim 1 operably linked to at least one regulatory sequence.

Claim 12. (previously presented) A transformed host cell comprising the chimeric polynucleotide of Claim 11.

Claim 13. (previously presented) The transformed host cell of Claim 12 further comprising a second chimeric polynucleotide comprising a nucleic acid encoding a polypeptide that regulates expression of at least one enzyme of the phenylpropanoid pathway.

Claim 14. (previously presented) The transformed host cell of Claim 13 wherein the second chimeric polynucleotide encodes a polypeptide comprising the maize C1 DNA binding domain, the maize transcription factor R, and the maize C1 activation domain.

Claim 15. (original) The transformed host cell of Claim 12 wherein the host cell is a eukaryotic cell.

Claim 16. (currently amended) The eukaryotic cell of Claim 15[[13]] wherein the cell is a yeast cell.

Claim 17. (original) The eukaryotic cell of Claim 15 wherein the cell is a plant cell.

Claim 18. (original) The plant cell of Claim 17 wherein the cell is a soybean cell.

Claim 19. (original) The plant cell of Claim 17 wherein the cell is a corn cell.

Claims 20-25. (canceled).

Claim 26. (previously presented) A method of altering the level of expression of isoflavone synthase in a host cell comprising:

(a) transforming a host cell with the chimeric polynucleotide of Claim 11 or transforming the host cell with the chimeric polynucleotide of Claim 11 and with a

second chimeric polynucleotide comprising a nucleic acid sequence encoding a polypeptide that regulates expression of at least one enzyme of the phenylpropanoid pathway; and

(b δ) growing the transformed host cell produced in step (a) under conditions that are suitable for expression of the chimeric polynucleotide wherein expression of the chimeric polynucleotide results in production of altered levels of isoflavone synthase in the transformed host cell.

Claims 27 and 28 (canceled).

Claim 29. (previously presented) The method of Claim 26 wherein the host cell is a eukaryotic cell.

Claim 30. (currently amended) The method of Claim 29[[26]] wherein the eukaryotic cell is a yeast cell.

Claim 31. (currently amended) The method of Claim 29[[26]] wherein the eukaryotic cell is a plant cell.

Claim 32. (original) The method of Claim 31 wherein the plant cell is a soybean cell.

Claim 33. (original) The method of Claim 31 wherein the plant cell is a corn cell.

Claims 34-50 (canceled).

Claim 51. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Phe

Xaa₁₆ is Leu

Xaa₂₃ is Ser

Xaa₂₅ is Lys

Xaa₃₉ is Lys

Xaa₄₈ is Leu

Xaa₆₀ is Leu

Xaa₇₃ is Leu

Xaa₇₄ is Ser

Xaa₉₅ is Thr

Xaa₉₆ is His

Xaa₁₀₂ is Asn

Xaa₁₁₀ is Ile

Xaa₁₁₂ is Arg

Xaa₁₁₇ is Asn

Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Ser
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Val
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is Tyr
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Ala
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Glu~~
~~Xaa₂₉₃ is Gln~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Arg
Xaa₃₂₈ is Gln

Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Val
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Gly
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Asp.

Claim 52. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Phe or Leu
Xaa₁₆ is Leu
Xaa₂₃ is Ser
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Ser
Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Thr

Xaa₁₁₂ is Arg
Xaa₁₁₇ is Asn
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Arg
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Ser
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Val
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is Tyr
Xaa₂₅₃ is Gly
Xaa₂₅₉ is Glu
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Ala
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Glu~~
~~Xaa₂₉₃ is Gln~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Leu
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala

Xaa₃₂₅ is Arg
Xaa₃₂₈ is Gln
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Val
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Gly
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Asp.

Claim 53. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Phe or Leu
Xaa₁₆ is Leu
Xaa₂₃ is Thr
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Tyr
Xaa₉₅ is Thr
Xaa₉₆ is His

Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is Arg
Xaa₁₁₇ is Ser
Xaa₁₁₈ is Leu
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Tyr
Xaa₂₁₉ is Trp
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Thr
~~Xaa₂₉₂ is Asp~~
~~Xaa₂₉₃ is His~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Ile

Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Gly
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Gly.

Claim 54. (currently amended) The isolated nucleic acid of Claim 1 where

~~Xaa₁₀ is Phe or Leu~~
Xaa₁₆ is Leu
Xaa₂₃ is Thr
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Pro
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Tyr

Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is Arg
Xaa₁₁₇ is Ser
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Ser
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Val
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is Tyr
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Ala
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Glu~~
~~Xaa₂₉₃ is Gln~~
Xaa₂₉₄ is Ile

Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Arg
Xaa₃₂₈ is Gln
Xaa₃₃₄ is Val
Xaa₃₄₂ is Ile
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is His
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Val
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Gly
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Asp.

Claim 55. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Phe or Leu
Xaa₁₆ is Leu
Xaa₂₃ is Thr
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu

Xaa₇₃ is Leu
Xaa₇₄ is Tyr
Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is Arg
Xaa₁₁₇ is Ser
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Val
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Asp~~

Xaa₂₉₃ is His
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Cys
Xaa₃₈₇ is Thr
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg
Xaa₄₂₉ is Leu
Xaa₄₃₅ is Arg
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Gly.

Claim 56. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Leu
Xaa₁₆ is Leu
Xaa₂₃ is Thr
Xaa₂₅ is Lys
Xaa₃₉ is Lys

Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Tyr
Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is Arg
Xaa₁₁₇ is Ser
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe

Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Asp~~
~~Xaa₂₉₃ is His~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Ala
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Gly.

Claim 57. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Leu
Xaa₁₆ is Leu
Xaa₂₃ is Thr

Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Tyr
Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is Arg
Xaa₁₁₇ is Ser
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Ala
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val

Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Met
Xaa₂₉₂ is Asp
Xaa₂₉₃ is His
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Gly.

Claim 58. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Leu

Xaa₁₆ is Leu
Xaa₂₃ is Thr
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Tyr
Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is Arg
Xaa₁₁₇ is Ser
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys

Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Thr
~~Xaa₂₉₂ is Asp~~
~~Xaa₂₉₃ is His~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Gly.

Claim 59. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Leu
Xaa₁₆ is Leu
Xaa₂₃ is Thr
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Tyr
Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is Arg
Xaa₁₁₇ is Ser
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is His

Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Asp~~
~~Xaa₂₉₃ is His~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Glu
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn

Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Gly.

Claim 60. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Leu
Xaa₁₆ is Leu
Xaa₂₃ is Thr
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Tyr
Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is Arg
Xaa₁₁₇ is Ser
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Ile
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe

Xaa₂₁₉ is Trp
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Asp
Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Thr
~~Xaa₂₉₂ is Asp~~
~~Xaa₂₉₃ is His~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln

Xaa₄₄₇ is Arg

Xaa₄₅₃ is Asn

Xaa₄₅₉ is Met

Xaa₄₈₅ is Gly.

Claim 61. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Leu

Xaa₁₆ is Leu

Xaa₂₃ is Thr

Xaa₂₅ is Lys

Xaa₃₉ is Lys

Xaa₄₈ is Leu

Xaa₆₀ is Leu

Xaa₇₃ is Leu

Xaa₇₄ is Tyr

Xaa₉₅ is Thr

Xaa₉₆ is His

Xaa₁₀₂ is Asn

Xaa₁₁₀ is Ile

Xaa₁₁₂ is Arg

Xaa₁₁₇ is Ser

Xaa₁₁₈ is Ser

Xaa₁₂₁ is Met

Xaa₁₂₂ is Val

Xaa₁₂₄ is Phe

Xaa₁₂₉ is Lys

Xaa₁₄₇ is Lys

Xaa₁₅₉ is Phe

Xaa₁₆₂ is Val

Xaa₁₆₆ is Gly

Xaa₁₇₀ is Gln

Xaa₁₇₅ is Leu

Xaa₁₈₃ is Thr

Xaa₁₈₇ is Ile

Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Thr
~~Xaa₂₉₂ is Asp~~
~~Xaa₂₉₃ is His~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg

Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Gly.

Claim 62. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Phe
Xaa₁₆ is Leu
Xaa₂₃ is Ser
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Ser
Xaa₉₅ is Ala
Xaa₉₆ is His
Xaa₁₀₂ is Ser
Xaa₁₁₀ is Val
Xaa₁₁₂ is Arg
Xaa₁₁₇ is Asn
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Glu
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Ser
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Val

Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is Tyr
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Ala
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Glu~~
~~Xaa₂₉₃ is Gln~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Arg
Xaa₃₂₈ is Gln
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Val
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Lys
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe

Xaa₄₂₂ is Gly
Xaa₄₂₈ is Gly
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Asp.

Claim 63. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Phe or Leu
Xaa₁₆ is Ser
Xaa₂₃ is Ser
Xaa₂₅ is Ile
Xaa₃₉ is Arg
Xaa₄₈ is Leu
Xaa₆₀ is Pro
Xaa₇₃ is Leu
Xaa₇₄ is Ser
Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is His
Xaa₁₁₇ is Asn
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Ser

Xaa₁₇₀ is Gln
Xaa₁₇₅ is Val
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is Tyr
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Ala
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Glu~~
~~Xaa₂₉₃ is Gln~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Val
Xaa₃₂₅ is Arg
Xaa₃₂₈ is Gln
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Val
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg

Xaa₄₀₄ is Pro
Xaa₄₁₃ is Ser
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Gly
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Ser
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Asp.

Claim 64. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Phe or Leu

Xaa₁₆ is Leu

Xaa₂₃ is Thr

Xaa₂₅ is Lys

Xaa₃₉ is Lys

Xaa₄₈ is Leu

Xaa₆₀ is Leu

Xaa₇₃ is Leu

Xaa₇₄ is Tyr

Xaa₉₅ is Thr

Xaa₉₆ is His

Xaa₁₀₂ is Asn

Xaa₁₁₀ is Ile

Xaa₁₁₂ is Arg

Xaa₁₁₇ is Ser

Xaa₁₁₈ is Ser

Xaa₁₂₁ is Met

Xaa₁₂₂ is Val

Xaa₁₂₄ is Phe

Xaa₁₂₉ is Lys

Xaa₁₄₇ is Lys

Xaa₁₅₉ is Phe

Xaa₁₆₂ is Val
Xaa₁₆₆ is Ser
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Val
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is Tyr
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Ala
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Glu~~
~~Xaa₂₉₃ is Gln~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Val
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Gln
Xaa₃₃₄ is Ala
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Gly
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Val

Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Gly
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Asp.

Claim 65. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Phe or Leu
Xaa₁₆ is Leu
Xaa₂₃ is Thr
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Tyr
Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is Arg
Xaa₁₁₇ is Ser
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys

Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Asp
Xaa₂₆₄ is Val
Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Asp~~
~~Xaa₂₉₃ is His~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Ile
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr

Xaa₃₈₇ is Ile
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg
Xaa₄₂₉ is Leu
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Gly.

Claim 66. (currently amended) The isolated nucleic acid of claim 1 where

Xaa₁₀ is Phe or Leu
Xaa₁₆ is Leu
Xaa₂₃ is Thr
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Tyr
Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is Arg
Xaa₁₁₇ is Ser
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Arg
Xaa₁₂₂ is Val

Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Val
Xaa₂₇₂ is Leu
Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Asp~~
~~Xaa₂₉₃ is His~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr

Xaa₃₈₁ is Glu

Xaa₃₈₅ is Tyr

Xaa₃₈₇ is Ile

Xaa₃₉₃ is Ile

Xaa₃₉₄ is Leu

Xaa₄₀₂ is Arg

Xaa₄₀₄ is Pro

Xaa₄₁₃ is Phe

Xaa₄₂₂ is Glu

Xaa₄₂₈ is Arg

Xaa₄₂₉ is Pro

Xaa₄₃₅ is Gln

Xaa₄₄₇ is Arg

Xaa₄₅₃ is Ile

Xaa₄₅₉ is Met, and

Xaa₄₈₅ is Gly.

Claim 67. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Phe or Leu

Xaa₁₆ is Leu

Xaa₂₃ is Thr

Xaa₂₅ is Lys

Xaa₃₉ is Lys

Xaa₄₈ is Leu

Xaa₆₀ is Leu

Xaa₇₃ is Leu

Xaa₇₄ is Tyr

Xaa₉₅ is Thr

Xaa₉₆ is His

Xaa₁₀₂ is Asn

Xaa₁₁₀ is Ile

Xaa₁₁₂ is Arg

Xaa₁₁₇ is Ser

Xaa₁₁₈ is Ser

Xaa₁₂₁ is Met
Xaa₁₂₂ is Ala
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Val
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Thr
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Arg
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Thr
~~Xaa₂₉₂ is Asp~~
~~Xaa₂₉₃ is His~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val

Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Ser
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Gly.

Claim 68. (currently amended) The isolated nucleic acid of Claim 1 where

Xaa₁₀ is Phe or Leu
Xaa₁₆ is Leu
Xaa₂₃ is Thr
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is Leu
Xaa₇₄ is Tyr
Xaa₉₅ is Thr
Xaa₉₆ is His
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile
Xaa₁₁₂ is Arg

Xaa₁₁₇ is Ser
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Leu
Xaa₁₆₂ is Val
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Gln
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Thr
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Ile
Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Thr
~~Xaa₂₉₂ is Asp~~
~~Xaa₂₉₃ is His~~
Xaa₂₉₄ is Ile
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala
Xaa₃₂₅ is Lys

Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Leu
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Met, and
Xaa₄₈₅ is Gly.

Claim 69. (currently amended) The isolated nucleic acid-of Claim 1 where

Xaa₁₆ is Leu
Xaa₂₃ is Thr
Xaa₂₅ is Lys
Xaa₃₉ is Lys
Xaa₄₈ is Leu
Xaa₆₀ is Leu
Xaa₇₃ is His
Xaa₇₄ is Tyr
Xaa₉₅ is Thr
Xaa₉₆ is Asn
Xaa₁₀₂ is Asn
Xaa₁₁₀ is Ile

Xaa₁₁₂ is Arg
Xaa₁₁₇ is Ser
Xaa₁₁₈ is Ser
Xaa₁₂₁ is Met
Xaa₁₂₂ is Val
Xaa₁₂₄ is Phe
Xaa₁₂₉ is Lys
Xaa₁₄₇ is Lys
Xaa₁₅₉ is Phe
Xaa₁₆₂ is Ala
Xaa₁₆₆ is Gly
Xaa₁₇₀ is Arg
Xaa₁₇₅ is Leu
Xaa₁₈₃ is Ala
Xaa₁₈₇ is Ile
Xaa₁₉₁ is Met
Xaa₂₀₉ is Phe
Xaa₂₁₉ is Trp
Xaa₂₂₃ is His
Xaa₂₅₃ is Glu
Xaa₂₅₉ is Lys
Xaa₂₆₃ is Val
Xaa₂₆₄ is Val
Xaa₂₆₈ is Val
Xaa₂₇₂ is Phe
Xaa₂₈₅ is Met
~~Xaa₂₉₂ is Asp~~
~~Xaa₂₉₃ is His~~
Xaa₂₉₄ is Thr
Xaa₃₀₁ is Phe
Xaa₃₀₆ is Thr
Xaa₃₁₁ is Val
Xaa₃₁₂ is Ala

Xaa₃₂₅ is Lys
Xaa₃₂₈ is Glu
Xaa₃₃₄ is Val
Xaa₃₄₂ is Arg
Xaa₃₇₇ is Thr
Xaa₃₈₁ is Glu
Xaa₃₈₅ is Tyr
Xaa₃₈₇ is Ile
Xaa₃₉₃ is Ile
Xaa₃₉₄ is Pro
Xaa₄₀₂ is Arg
Xaa₄₀₄ is Pro
Xaa₄₁₃ is Phe
Xaa₄₂₂ is Gly
Xaa₄₂₈ is Arg
Xaa₄₂₉ is Pro
Xaa₄₃₅ is Gln
Xaa₄₄₇ is Arg
Xaa₄₅₃ is Asn
Xaa₄₅₉ is Thr, and
Xaa₄₈₅ is Gly.

Claim 70. –72. (not entered)

Amendments to the Sequence Listing

The attached Sequence Listing amends the errors introduced in the Sequence Listing filed with the response dated February 5, 2005. The present Sequence Listing includes the following corrections: the Ile amino acid at position 294 of SEQ ID NO:66 has been replaced with Xaa and defined under Misc_Feature in the <223> identifier as Xaa=Thr or Ile. In addition, Xaa at position 295 in SEQ ID NO:66 has been replaced with Lys. Support for the changes to the Sequence Listing are presented in the Remarks, set forth below, and are herein incorporated by reference.

This Sequence Listing will replace all prior versions, and Sequence Listings, in the Application:

Attachment: Replacement Sequence Listing